TRC SIDEKICK FM

UNIVERSAL IRRIGATION REMOTE CONTROL

Operation and Installation Manual

TRC Irrigation Remotes

INTRODUCTION

Congratulations! You have just purchased one of the most advanced and reliable remote control devices available - The Sidekick FM.

We appreciate the vote of confidence you have expressed by purchasing this TRC Irrigation Remotes product and we welcome you to the growing family of satisfied TRC Irrigation Remotes product users.

The Sidekick FM is the sixth generation of products introduced by TRC Irrigation Remotes since 1982. Unique to the irrigation industry, The Sidekick FM uses TRC Irrigation Remotes' proprietary PDTFM transmission format, allowing the Sidekick FM transmitter to transmit up to 5 miles* while using only one 9V alkaline battery.

For best results and to maximize the features and functions of any Sidekick FM system, carefully read this manual and keep it on hand for future reference.

FCC REGULATIONS

A FCC License is not required for the owner or operator of this remote control device

The Receiver has been tested and found to comply with the limits for a Class-A digital device, pursuant to Part 15 of the FCC Rules. The Transmitter has been tested and found to comply with Part 95 Subpart E. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Canadian Certification # 32151021261

* The Range of all Radio products is dependant on local conditions, antenna selection, and antenna location.

WARRANTY

This TRC Irrigation Remotes product carries a
"THREE YEAR WARRANTY".

TRC Irrigation Remotes provides a limited three year warranty inaugural to the date of purchase. TRC Irrigation Remotes reserves the right repair or replace any of its products or parts found to be defective from workmanship and/or materials. Said warranty does not extend to damage of a TRC Irrigation Remotes product resulting from misuse, neglect, abuse, improper installation, accidents, or acts of nature.

Only the original purchaser of TRC Irrigation Remotes product(s) is eligible to said warranty. In no event shall TRC Irrigation Remotes be liable for incidental or consequential damages. All implied warranties are limited in duration to three years following the date of purchase. These exclusions or limitations apply only in those states where permitted by law.

Models and Description

Several differing products are available in the Sidekick FM line of products, which are all designed to take advantage of the Sidekick FM transmitter. The Sidekick FM transmitter provides the user with a wireless (remote) method of operating the valves/stations of an irrigation system without requiring the user to directly access an irrigation controller. Instructions to the irrigation system are executed by a Sidekick FM receiver installed on the irrigation controller. Two types of Sidekick FM receiver are available:

The Sidekick FM universal receiver allows the user to control most 24VAC irrigation controllers using a hardwired Permanent Controller Connector or via Direct Control Interface designed for controllers with an integrated remote interface.

The Sidekick FM Controller Specific Receivers are designed for specific irrigation controllers with built in remote interfaces. These receivers are capable operating all the stations that the irrigation controller has available.

The **Sidekick FM 12** (PN: 01015) is a universal receiver capable of operating up to 12 stations on an irrigation controller.

The **Sidekick FM 24** (PN: 1010 & # 01010A) is a universal receiver capable of operating up to 24 stations on an irrigation controller.

The **Sidekick FM for Rain Bird®** (PN: 01018) is a controller specific receiver designed for Rain Bird® remote port ready controllers. Note: not all Rain Bird® controllers are remote port ready.

The **Sidekick FM for Hunter®** (PN: 01016) is a controller specific receiver designed for Hunter® ICC and Pro C controllers.

The **Sidekick FM for Irritrol®** (PN: 01019) is a controller specific receiver designed for Irritrol® Dial and MC controllers.

The **Sidekick FM for Superior Sterling®** (PN: 01021) is a controller specific receiver designed for Superior Sterling® ICC and Pro C controllers.

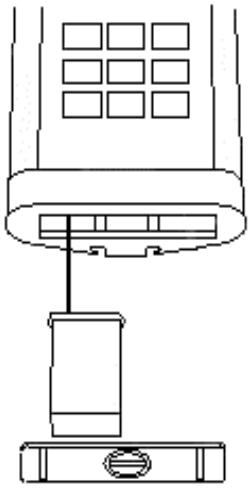
The **Sidekick FM for Hit®** (PN: 01022) is a controller specific receiver designed for Hit® Logic 2 and Logic 3 controllers.

The **Direct Controller interface (DCI)** is an accessory designed for the Sidekick FM universal receivers, which allows the receiver to operate all of the stations that the controller has available and is not limited to 12 or 24 stations. The DCI is available for Irritrol®, Hunter®, and Rain Master® controllers.

Getting To Know The Transmitter

The Sidekick FM transmitter is designed to allow the user to operate one valve/station at a time, making it ideal for the irrigation maintenance professional to use for one time maintenance, seasonal start-ups and blowouts. To operate the transmitter the user selects the number of the valve/station using the keypad followed by pressing the “ON” button of the transmitter. The transmitter sends a proprietary PDTFM signal to the Receiver turning “ON” or “OFF” a selected valve as well as the Pump Start/ Master Valve Station of the receiver automatically.

When not in use the transmitter reverts to a standby mode, which is designed for minimal power consumption to extend the life of the battery. Once any key has been pressed, power is automatically restored for ten seconds to allow commands to be sent to the receiver. The Transmitter is designed to operate using a 9 VDC Alkaline battery. **NOTE: Batteries such as general-purpose 9 VDC batteries will lower the performance of the transmitter.**



Remove the battery door (cover) on the underside of the transmitter to replace the battery

Transmitter requires one 9V alkaline battery.

The Transmitter Key Pad

To clearly indicate that a key on the keypad has been pressed, the Sidekick FM Transmitter makes an audible beep.

The Transmitter will beep once when any Number Key is pressed. When the “ON” or “OFF” key is pressed the transmitter will beep twice. The first beep indicates that the transmission is starting, and the second beep indicates that the transmission has been completed.

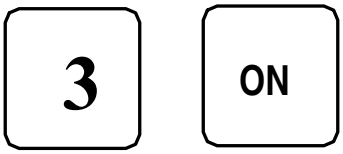
Transmitter Operating Instructions

Valve On/Valve Off:

To turn a valve "On" press the desired valve/station number then press the "On" key. Pressing "Off” will turn the last zone off.

Example:

To turn on valve 3:



To turn off valve 3:

Error Tone:

A “squawk” error tone indicates that an incorrect series of keys has been pressed. When the error tone is heard, wait ten seconds and simply restart the series of commands.

Low Battery Tone:

A rapid sequence of beeps after the transmission tone indicates low battery power. Replace with a new 9 VDC alkaline battery.

Installing The Universal Receiver

The Sidekick FM Universal Receiver is designed to work with most 24 VAC solenoid valve irrigation systems. Using a permanent controller connector the receiver connects to individual valves at the controller's terminal strip or directly to the valve wires at the controller, and bypasses the controller's functions by directly activating the valves.

WARNING!

Improper wiring can cause severe damage to the Receiver and may be a fire hazard. Never connect directly to 110 VAC or damage to the receiver will occur and you will void your warranty.

Installation Instructions

The housing can be mounted to the right side of the irrigation controller (Figure 1) or mounted to a wall (Figure 2)

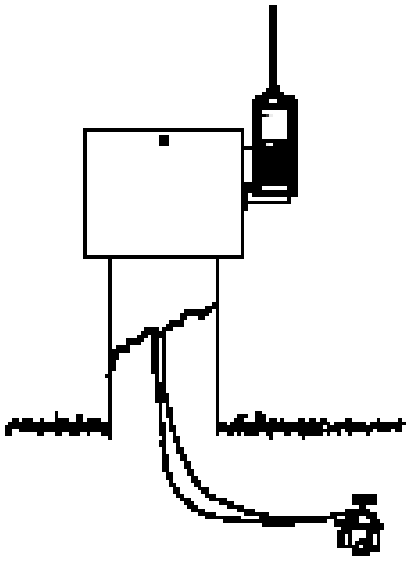


FIGURE 1

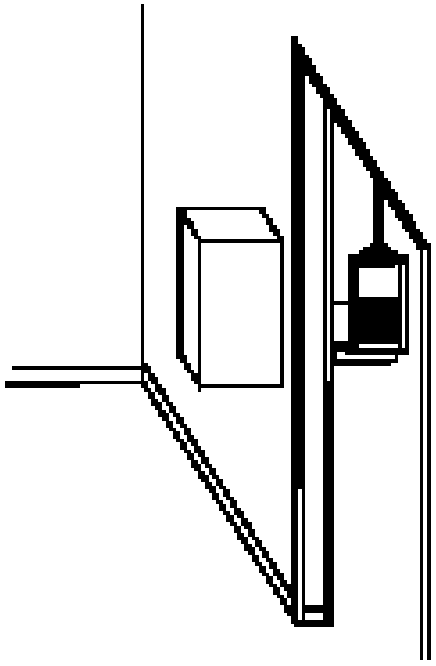


FIGURE 2

1. Use Figure 4 (on the next page) as a pattern to locate the mounting holes to be drilled through the controller. Drill holes according to the diameters as shown.

2. Peel backing off gasket (2) and attach it to housing (1) as shown in figure 3.Peel backing off gasket (3) and attach it to the inside of housing door (4) as shown in figure 3. IMPORTANT: For maximum seal, the gasket must fit snug against the sidewall of the housing door.

3. Insert 1” Allen head cap screw (5) through the hole in the housing door (4) as shown in figure 3.Slip on retainer ring (6) approximately 3/8” from the threaded end of the screw (5).

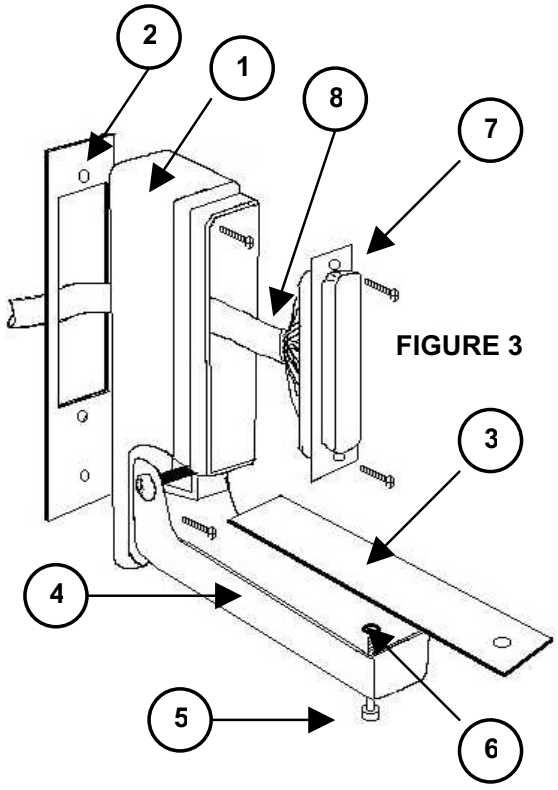


FIGURE 3

4. Mount the housing (1) to the irrigation controller using two 6-32 x ¾ Machine screws, two flat washers, and two hex nuts. NOTE: Hardware is not provided to mount housing (1) to wood or sheetrock.

5. Attach the D-Subminiature connector (7) to the inside of the housing (1) with two 4-40 x 9/16 machine screws. First insert the loose wire end of the cable (8) through the ½” hole in the irrigation controller. Important: Orient the D-Subminiature connector (7) to the inside of the housing (1) as shown in figure 3. If the orientation of the connector is not as shown in figure 3, the receiver will not plug in to the connector.

6. The connector is now ready to be wired to the terminal strip of the irrigation controller. Use the color chart provided on the other side of the page.

IMPORTANT: Care should be taken to prevent connecting any wires of the cable to 110 VAC this will result in damage to the receiver.

Operating instructions

Plug the receiver directly in the connector as shown in figure 1. When the receiver is not in use, close and secure the housing door (4) by tightening the Allen head screw with a 3-32” Allen wrench. IMPORTANT: Do not over torque the Allen head screw, it should be snug.

PCC Cable and Housing

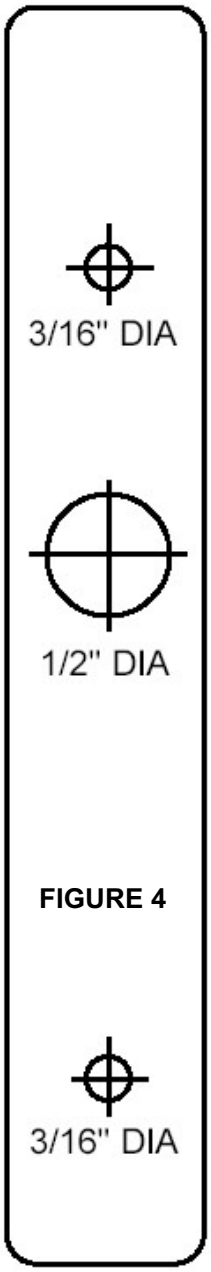


FIGURE 4

Installing The Sidekick Receiver For Rain Bird® Controllers

Description

The Sidekick FM System for Rain Bird® controllers consist of three components a transmitter, receiver, and a Permanent Controller Cable (PCC-RB). The direct controller interface cable and the receiver are the only components that require installation. Once the PCC-RB cable is installed, it becomes a permanent access point for the receiver. To use the Sidekick receiver on more then one controller simply install another PCC-RB cable in the other controller.

Permanent Controller Cable (PCC-RB) Installation

1. Follow PCC installation instructions 1-5 on page 7.

2. The connector is now ready to be wired to the terminal strip of the irrigation controller. Use the color chart provided on the other side of the page.

3. Connect side “A” of the PCC-RB cable to the remote interface connector on the Controller. The connector is designed to fit one way do not force the connector on to the controller.
4. Restore power to the controller.

PCC-RB Cable Part Number: 01387

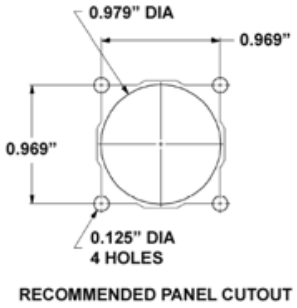
Installing The Sidekick Receiver For Irritrol® Controllers

Description

The Sidekick FM System for the Irritrol® Dial & MC controllers consist of three components a transmitter, receiver, and a direct controller interface cable. The direct controller interface cable and the receiver are the only components that require installation. Once the DCI-1 cable is installed, it becomes a permanent access point for the receiver. To use the Sidekick receiver on more then one controller simply install another DCI-1 cable in the other controller.

Direct Controller Interface Cable (DCI-1) Installation

1. Disconnect power from the controller to avoid accidentally damaging the controller.
2. Determine where to install side “B”, the interface receptacle (See diagram on next page) of the DCI-1 cable. Use an existing cut out or the figure to the right for the hole locations.
3. Use four 6-32 screws, lock washers, and nuts of the appropriate length and size.
4. Remove any screws securing the controller face plate to the controller housing.
5. Carefully remove the controller faceplate to reveal the remote interface connector on the right side of the faceplate.
6. Connect side “A” of the DCI-1 cable to the remote interface connector on the right side of the faceplate. See diagram on next page. The connector is designed to fit one way do not force the connector on to the controller faceplate.
7. Carefully reinstall the controller faceplate.
8. Replace the screws securing the faceplate to the controller.
9. Restore power to the controller.



RECOMMENDED PANEL CUTOUT

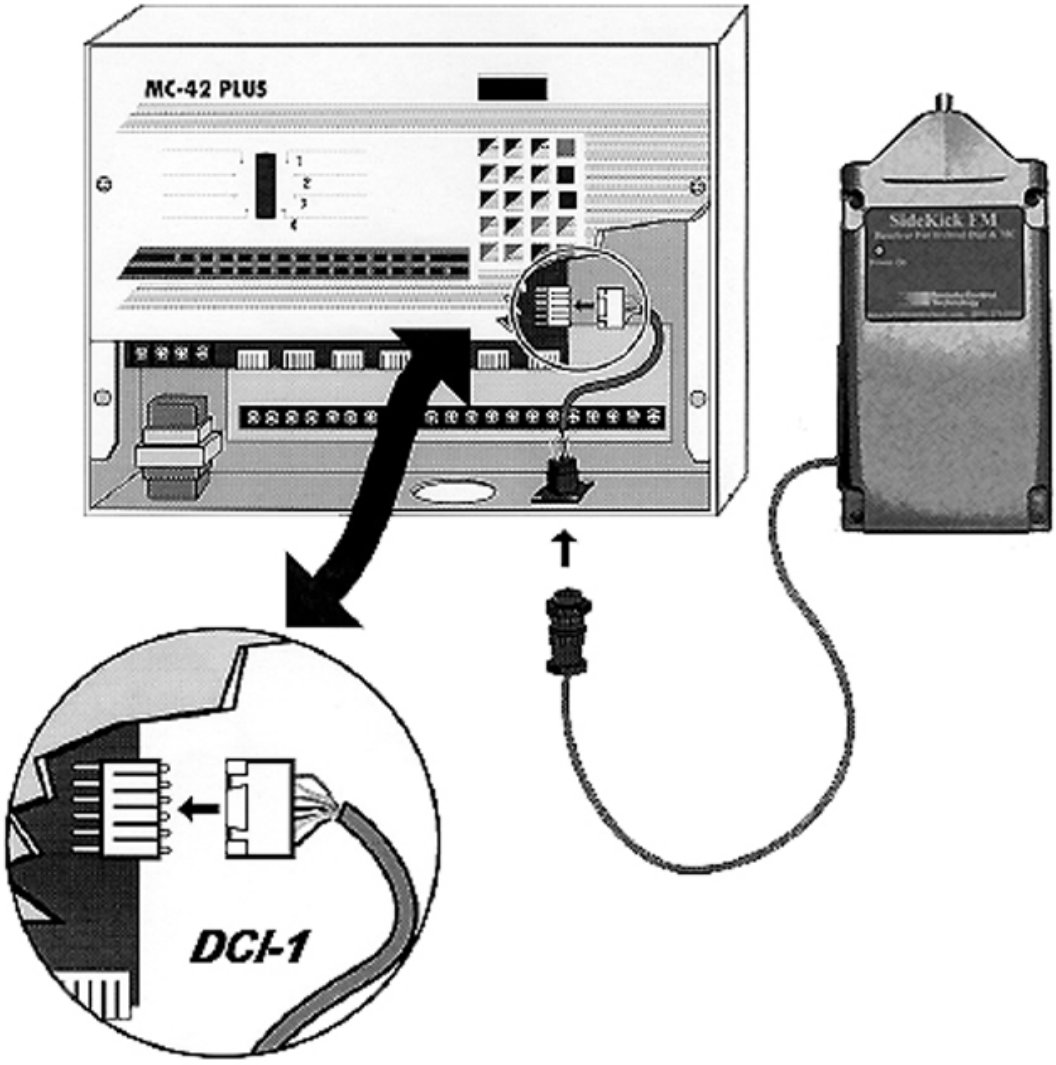
DCI-1 cable Part Number: 01381

Connecting the Sidekick FM Receiver

Connect the interface plug to the interface receptacle on the controller. Twist the plug clockwise until the plug stops. Do not over tight the plug. See diagram below

Disconnecting the Sidekick FM Receiver

Twist the circular plug in a counterclockwise motion and remove the plug from the receptacle.



DCI-1 Cable and Sidekick Receiver installation

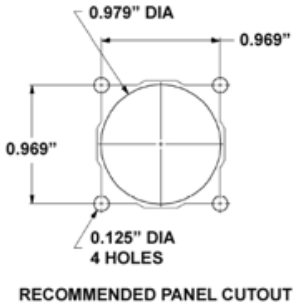
Installing The Sidekick Receiver Superior® Sterling Controllers

Description

The Sidekick FM System for the Superior® Sterling controllers consist of three components a transmitter, receiver, and a direct controller interface cable. The direct controller interface cable and the receiver are the only components that require installation. Once the DCI-1 cable is installed, it becomes a permanent access point for the receiver. To use the Sidekick receiver on more then one controller simply install another DCI-1 cable in the other controller.

Direct Controller Interface Cable (DCI-1) Installation

1. Disconnect power from the controller to avoid accidentally damaging the controller.
2. Determine where to install side “B”, the interface receptacle (See diagram on next page) of the DCI-1 cable. Use an existing cut out or the figure to the right for the hole locations.
3. Use four 6-32 screws, lock washers, and nuts of the appropriate length and size.
4. Remove any screws securing the controller’s lower faceplate to the controller housing.
5. Carefully remove the controller’s lower faceplate to reveal the remote interface connector on the right side of the controller.
6. Connect side “A” of the DCI-1 cable to the remote interface connector on the right side of the faceplate. See diagram on next page. The connector is designed to fit one way do not force the connector on to the controller faceplate.
7. Carefully reinstall the controller’s lower faceplate.
8. Replace the screws securing the lower faceplate to the controller.
9. Restore power to the controller.



RECOMMENDED PANEL CUTOUT

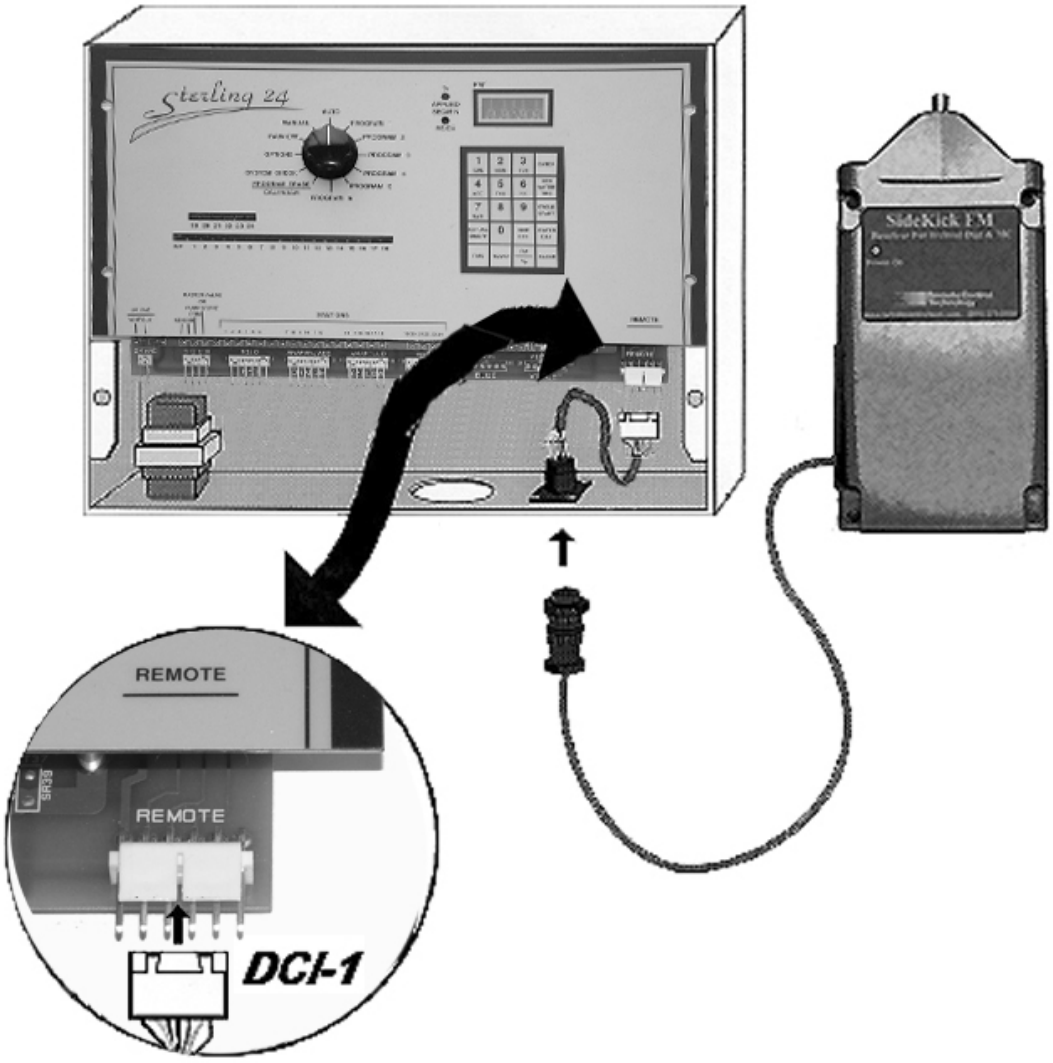
DCI-1 cable Part Number: 01381

Connecting the Sidekick FM Receiver

Connect the interface plug to the interface receptacle on the controller. Twist the plug clockwise until the plug stops. Do not over tight the plug. See diagram below.

Disconnecting the Sidekick FM Receiver

Twist the circular plug in a counterclockwise motion and remove the plug from the receptacle.



DCI-1 Cable and Sidekick Receiver installation

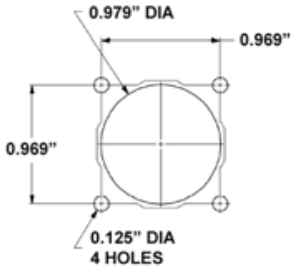
Installing The Sidekick Receiver
Hit® Logic 3 & 2 Controllers

Description

The Sidekick FM System for the Hit® Logic 3 & 2 controllers consist of three components a transmitter, receiver, and a direct controller interface cable. The direct controller interface cable and the receiver are the only components that require installation. Once the DCI-1 cable is installed it becomes a permanent access point for the receiver. To use the Sidekick receiver on more then one controller simply install another DCI-1 cable in the other controller.

Direct Controller Interface Cable (DCI-1) Installation

1. Disconnect power from the controller to avoid accidentally damaging the controller.
2. Determine where to install side “B”, the interface receptacle (See diagram on next page) of the DCI-1 cable. Use an existing cut out or the figure to the right for the hole locations.
3. Use four 6-32 screws, lock washers, and nuts of the appropriate length and size.
4. Remove any screws securing the controller’s lower faceplate to the controller housing.
5. Carefully remove the controller’s lower faceplate to reveal the remote interface connector in the center of the controller.
6. Connect side “A” of the DCI-1 cable to the remote interface connector in the center of the faceplate. See diagram to the right. The connector is designed to fit one way do not force the connector on to the controller faceplate.
7. Carefully reinstall the controller’s lower faceplate.
8. Replace the screws securing the lower faceplate to the controller.
9. Restore power to the controller.



RECOMMENDED PANEL CUTOUT

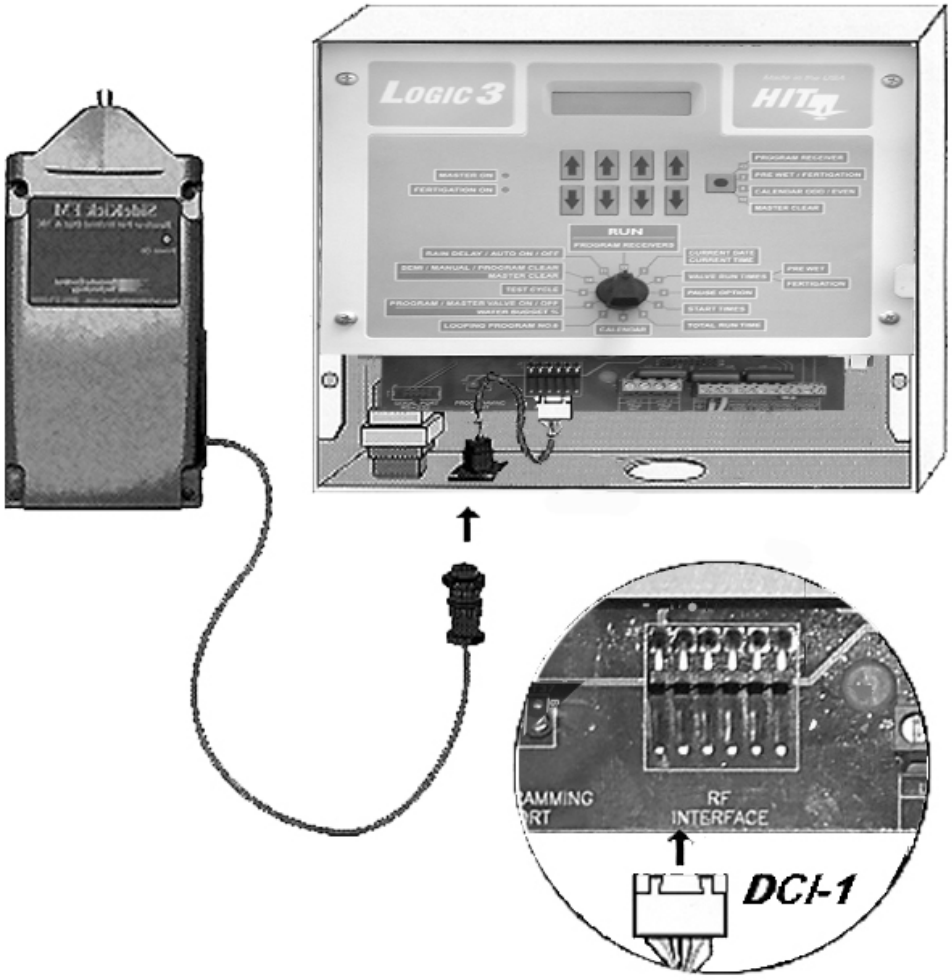
DCI-1 cable Part Number: 01381

Connecting the Sidekick FM Receiver

Connect the interface plug to the interface receptacle on the controller. Twist the plug clockwise until the plug stops. Do not over tight the plug. See diagram below.

Disconnecting the Sidekick FM Receiver

Twist the circular plug in a counterclockwise motion and remove the plug from the receptacle.



DCI-1 Cable and Sidekick Receiver installation

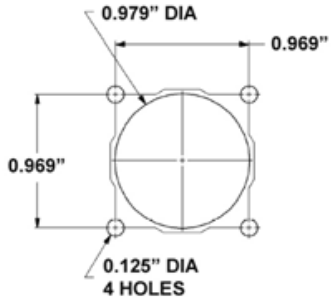
Installing The Sidekick Receiver Hunter® Controllers

Description

The Sidekick FM System for the Hunter® controllers consist of three components a transmitter, receiver, and a direct controller interface cable. The direct controller interface cable and the receiver are the only components that require installation. Once the DCI-1-H cable is installed, it becomes a permanent access point for the receiver. To use the Sidekick receiver on more then one controller simply install another DCI-1-H cable in the other controller.

Direct Controller Interface Cable (DCI-1-H) Installation

1. Open the front panel door of the controller housing.
2. Disconnect power from the controller to avoid accidentally damaging the controller.
3. Determine where to install side “B”, the interface receptacle (See diagram on next page) of the DCI-1-H cable. Use an existing cut out or the figure to the right for the hole locations.
4. Use four 6-32 screws, lock washers, and nuts of the appropriate length and size.
5. Secure the interface receptacle to the cutout or hole location.



RECOMMENDED PANEL CUTOUT

6. Connect side “A” of the DCI-1-H cable to the Main Control module. See diagram on next page.
7. Connect the Red wire to the terminal Marked “AC” <u>above</u> the terminal marked “GND”.
8. Connect the White wire to the terminal marked “AC” <u>below</u> the terminal marked “REM”.
9. Connect the Blue wire to the terminal marked “REM”
10. Close the front panel door of the controller housing.
11. Restore power to the controller.

Molex Connector Side “A”

Interface receptacle Side “B”

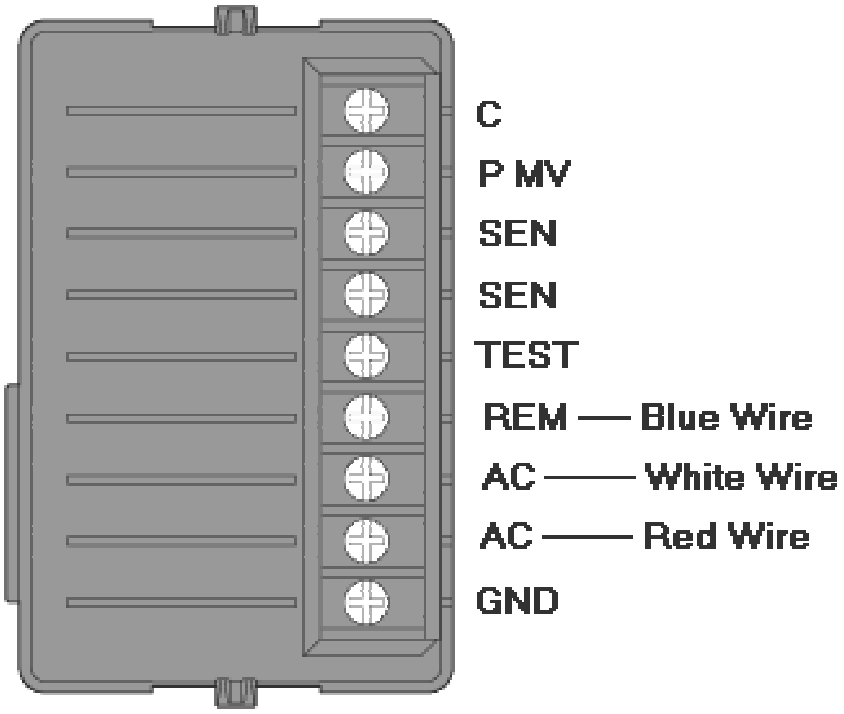
DCI-1-H cable Part Number: 01386

Sidekick FM Receiver

Connect the interface plug to the interface receptacle on the controller. Twist the plug clockwise until the plug stops. Do not over tight the plug. See diagram below.

Disconnecting the Sidekick FM Receiver

Twist the circular plug in a counterclockwise motion and remove the plug from the receptacle.



The Blue wire is connected to the terminal marked “REM”
The White wire is connected to the terminal marked “AC”
The Red wire is connected to the terminal marked “AC”

DCI-1-H Cable and Sidekick Receiver installation

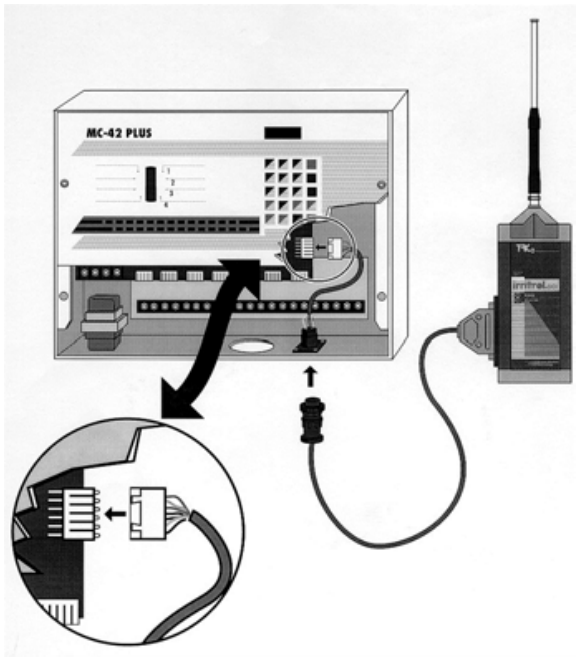
If you receive an “ERR” message on the LCD display of the controller after wiring the connector as shown, then reverse the positions of the White and Red wires

Installing The Direct Controller Interface

Description

The Direct Controller interface (DCI) is an accessory designed for the Sidekick FM universal receivers, which allows the receiver to operate all of the stations that the controller has available and is not limited to 12 or 24 stations. The DCI is available for Irritrol®, Hunter®, and Rain Master® controllers. The DCI converts the control logic of the Universal Receiver to match the control logic of the controller. This expands the capability of the TRC Commander or Sidekick to operate as many stations as the controller has available, rather than limitations of 12, 24, or 32 stations.

Installation



DCI-1 to controller Installation
Refer to page 10 of this manual.

DCI-1-H to Controller installation
Refer to page 16 of this manual.

DCI-2 to Universal Receiver Installation
After the DCI-1 installation is complete. All that remains is to connect the DCI-2 and the universal receiver to the DCI-1. The first step is to connect the 37 PIN D-sub connector of the DCI-2 to the Universal receiver. Then connect the 9 PIN barrel connector to the DCI-1 installed in the controller.

NOTE: ALWAYS CONNECT THE DCI-2 TO THE RECEIVER FIRST OTHERWISE THE RECEIVER WILL BE DAMAGED INTERNALLY AND NEED TO BE REPAIRED.

Trouble Shooting Chart

My Transmitter does not beep.		Check the battery. Using a voltmeter or a battery tester, test the battery voltage. Replace the battery if the voltage is below 6.8 volts.
My Transmitter is beeping rapidly.		Rapid beeps after a transmiision is an indication the the battery voltage is low. Replace the battery with a new high quality 9 VDC Alkaline battery.
My Sidekick system is not getting any range		See antenna installation tips for proper antenna installation.
My Sidekick is turning off after 20 minutes.		The Receiver has a default 20 minute shut off. When a valve is activated it remains on for 20 minutes and shuts off
My Receiver is not getting any power.		If receiver power light is not on check to see that the remote interface cable is installed properly and the controller has power.

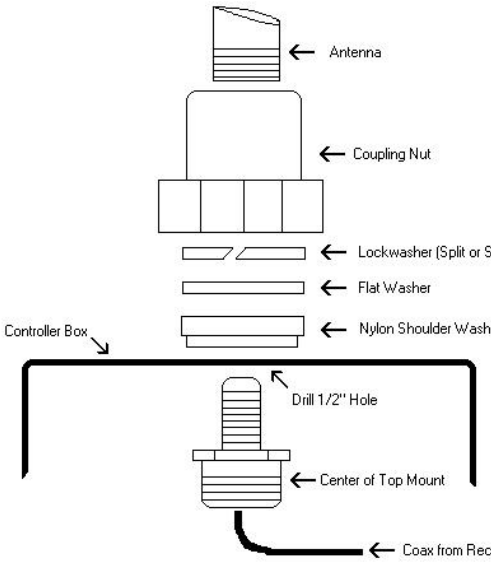
For Technical Support call 800-275-8558 Monday through Friday 7AM - 4PM PST. All goods returned to TRC Irrigation Remotes must be accompanied with a RMA. Please use our toll free # to obtain a RMA.

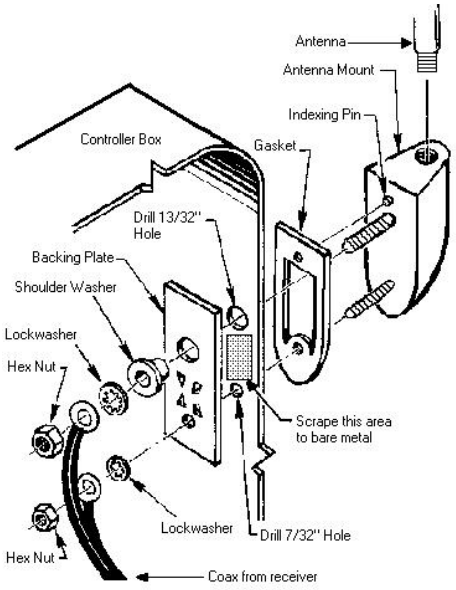
Products returned without an RMA will be charged a $150 flat rate, regardless of problem.

Antenna Installation Tips

Successful wireless communication range is achievable in most locations as long as these installation practices are observed. TRC Irrigation Remotes can supply connectors and RG58 Coaxial Cable in lengths from 3 – 100 feet (specify when ordering). Your range will be maximized by following these guidelines:

- Mount the antenna at least 40 feet away from electric motors, large power transformers, power lines, VFDs or any equipment that produces ambient electrical noise. Otherwise, the receiver may have trouble distinguishing the FM transmitter signal from this noise.
- Mount all antennas outdoors. Our Wireless Switch System (both FM transmitter and receiver) communicates in the RF radio frequency spectrum at 27 MHz. This frequency has great characteristics for long range but the signals will not go through walls. For equipment located indoors, run a length of RG-58 coaxial cable from the receiver to an antenna mounted outdoors.
- Mount antennae as high as possible, at least 3 feet away from vertical surfaces and not under roof awnings.
- Use only high-quality antenna and cable connectors, which are available from Remote Control Technology.
- Do not loop excess coax cable into a coil. This will cause a RF radio frequency choke and reduce your signal range. If you cannot, loosely route it back and forth in an "S" configuration.





Top Mount Antenna Diagram Side Mount Antenna Diagram

24 Station Connector Wiring Color Codes

Valve	Wire Color	Valve	Wire Color
1	Black	19	Green w/ black and white stripe
2	White	20	Orange w/ black and white stripe
3	Red	21	Blue w/ black and white stripe
4	Green	22	Black w/ red and green stripe
5	Orange	23	White w/ red and green stripe
6	Blue	24	Red w/ black and green stripe
7	White w/ black stripe		
8	Red w/ black stripe		
9	Green w/ black stripe		
10	Orange w/ black stripe		
11	Blue w/ black stripe		
12	Black w/ white stripe		
13	Blue w/ red stripe		
14	Red w/ green stripe		
15	Orange w/ green stripe		
16	Black w/ white and red stripe	Com	Orange w/ red stripe
17	White w/ black and red stripe	M.V.	Green w/ white stripe
18	Red w/ black and white stripe	24 V	Blue w/ white stripe

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